

Amendment of the claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-51. (Canceled).

52. (Currently amended) A method of separating an immunoreactive compound antibody or antibody fragment from at least one immaterial component in a fluid mixture ~~using SMB affinity chromatography~~, comprising:

- (a) providing a SMB simulated moving bed (SMB) chromatography apparatus that comprises at least one module a plurality of modules in fluid conducting communication with said apparatus, wherein said module comprises modules comprise at least one solid phase comprising a ligand for which the immunoreactive compound antibody or antibody fragment has selective affinity, and wherein said apparatus comprises a plurality of zones through which the module passes modules pass;
- (b) introducing the fluid mixture into the a module in an association zone wherein the fluid mixture contacts the solid phase in a countercurrent mode and the immunoreactive compound antibody or antibody fragment associates with the solid phase;
- (c) introducing a wash buffer into the module comprising the associated immunoreactive compound antibody or antibody fragment in at least one wash zone, wherein the wash buffer contacts the solid phase and substantially removes at least one immaterial component from said module;
- (d) introducing an eluent into the module comprising the associated immunoreactive compound antibody or antibody fragment from step (c) in an elution zone, wherein the eluent contacts the solid phase and promotes disassociation of the immunoreactive compound antibody or antibody fragment from the solid phase;
- (e) removing ~~a product stream comprising the immunoreactive compound antibody or antibody fragment~~ that is substantially separated from at least one immaterial component in said fluid mixture;

- (f) introducing an elution wash buffer into the module from step (e) in an elution wash zone;
- (g) introducing a solution comprising a regenerant into the module from step (f) in a regeneration zone; and
- (h) introducing ~~a re-equilibration~~ an equilibration buffer into the module in ~~a re-equilibration~~ an equilibration zone, wherein the ~~re-equilibration~~ equilibration buffer creates an environment in the module that permits binding of the immunoreactive compound antibody or antibody fragment to the solid phase comprising the ligand.

53. (Canceled)

54. (Currently amended) A method according to claim 53, ~~which 52, wherein step (g) comprises introducing a regeneration buffer comprising urea into a the module comprising the at least one solid phase of step (a) in a regeneration zone.~~

55. (Canceled)

56. (Currently amended) A method according to claim 53, ~~which comprises contacting the at least one solid phase of step (a) with 52, wherein step (g) comprises introducing a clean in place (CIP) solution into the module.~~

57. (Previously presented) A method according to claim 56, wherein the CIP solution comprises phosphoric acid.

58. (Canceled)

59. (Canceled)

60. (Currently amended) A method according to claim 52, wherein the immunoreactive compound antibody or antibody fragment comprises a constant region of an immunoglobulin and the solid phase comprises Protein A or Protein G.

61. (Previously presented) A method according to claim 60, wherein the eluent comprises an acidic buffer.

62. (Previously presented) A method according to claim 52, wherein effluent of a module in at least one wash zone is fed back into a module in the association zone.

63. (Currently amended) A method according to claim 52, wherein step (c) of said method comprises introducing a high salt wash buffer into a module comprising the associated immunoreactive compound antibody or antibody fragment in a first wash zone.

64. (Currently amended) A method according to claim 63, wherein step (c) of said method further comprises introducing a low salt wash buffer into a module comprising the associated immunoreactive compound antibody or antibody fragment in a second wash zone.

65. (Currently amended) A method according to claim 52, further comprising a step following wash step (c) that comprises introducing solution containing purified immunoreactive compound antibody or antibody fragment from the product stream into a module in an entrainment rejection zone prior to elution of immunoreactive compound antibody or antibody fragment from said module.

66. (Canceled)

67. (Currently amended) A method according to claim 52, wherein the concentration of immunoreactive compound antibody or antibody fragment in the product stream obtained in step (e) is greater than the concentration of immunoreactive compound antibody or antibody fragment in the fluid mixture that is introduced in step (a).